

SEQUENCE LISTING

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<120> A TRANSMEMBRANE PROTEIN AS A DOWNSTREAM TARGET OF NEUROTROPHIN AND
EPHRIN RECEPTOR TYROSINE KINASES, DNA ENCODING SAME AND MONOCLONAL
ANTIBODIES THERETO

<130> CHAO11A

<140> NOT YET ASSIGNED

<141> 2001-12-19

<150> 60/256,909

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<160> 8

<170> PatentIn version 3.1

<210> 1

<211> 5148

<212> DNA

<213> Rattus norvegicus

<220>

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<222> (1)..(5148)

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Asn Ile Pro Ala Leu Lys Ala Leu Leu Glu Lys Cys Lys Asp Val Asp	
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Glu Arg Asn Glu Cys Gly Gln Thr Pro Leu Met Leu Ala Ala Glu Gln	
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ctg gag cac cga gac atg ggt gga tgg aca gct ctc atg tgg gcg tgc	336
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Gly	Ala	Lys	Val	Asn	Cys	Ser	Asp	Lys	Tyr	Gly	Thr	Thr	Pro	Leu	Val		
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Trp	Ala	Ala	Arg	Lys	Gly	His	Leu	Glu	Cys	Val	Lys	His	Leu	Leu	Ala		
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Thr	Ala	Leu	Tyr	Trp	Ala	Val	Glu	Lys	Gly	Asn	Ala	Thr	Met	Val	Arg		
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Gly Asp Thr Pro Leu His Val Ala Ile Arg Gly Arg Ser Arg Arg Leu	
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Leu Tyr Ala Gln Trp Gly Ser Gly Lys Ser Phe Leu Leu Lys Lys Leu	
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Gln Phe Ser Trp Leu Ile Val Phe Leu Thr Leu Leu Leu Cys Gly Gly	
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Ile Ser Leu Ser Phe Leu Ala Leu Ile Tyr Ile Phe Phe Ile Val Ile	
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850 855 860	
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Thr Ala Leu Asn Arg Arg Asp Thr Tyr Arg Arg Arg Gln Met Gln Arg	
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Val Gln Asn Glu Asn Leu Lys Ser Met Ala His Lys Arg Ser Gln	
1670 1675 1680	

cgc tcc agt tac aca agg ctc tcg aaa gat gca tct gag cta cat 5094
Arg Ser Ser Tyr Thr Arg Leu Ser Lys Asp Ala Ser Glu Leu His
1685 1690 1695

gca gcc tcc tcg gag agc aca ggc ttt gga gaa gag aga gag agc 5139
Ala Ala Ser Ser Glu Ser Thr Gly Phe Gly Glu Glu Arg Glu Ser
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Ile Leu	
1715	

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Asn Ile Pro Ala Leu Lys Ala Leu Leu Glu Lys Cys Lys Asp Val Asp
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Glu Arg Asn Glu Cys Gly Gln Thr Pro Leu Met Leu Ala Ala Glu Gln
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Gly Asn Val Glu Ile Val Lys Glu Leu Leu Lys Asn Gly Ala Asn Cys
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Asn Leu Glu Asp Leu Asp Asn Trp Thr Ala Leu Ile Ser Ala Ser Lys
65 70 75 80

Glu Gly His Ile His Ile Val Glu Glu Leu Leu Lys Ser Gly Ala Ser
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Leu Glu His Arg Asp Met Gly Gly Trp Thr Ala Leu Met Trp Ala Cys
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Tyr Lys Gly Arg Thr Asp Val Val Glu Leu Leu Leu Ser His Gly Ala
115 120 125

Asn Pro Ser Val Thr Gly Leu Gln Tyr Ser Val Tyr Pro Ile Ile Trp
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Ala Ala Gly Arg Gly His Ala Asp Ile Val His Leu Leu Leu Gln Asn

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 Gly Ala Lys Val Asn Cys Ser Asp Lys Tyr Gly Thr Thr Pro Leu Val
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 Trp Ala Ala Arg Lys Gly His Leu Glu Cys Val Lys His Leu Leu Ala
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 Met Gly Ala Asp Val Asp Gln Glu Gly Ala Asn Ser Met Thr Ala Leu
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 Ile Val Ala Val Lys Gly Gly Tyr Thr Gln Ser Val Lys Glu Ile Leu
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 Lys Arg Asn Pro Asn Val Asn Leu Thr Asp Lys Asp Gly Asn Thr Ala
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 Leu Met Ile Ala Ser Lys Glu Gly His Ile Glu Ile Val Gln Asp Leu
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 Leu Asp Ala Gly Thr Tyr Val Asn Ile Pro Asp Arg Ser Gly Asp Thr
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 Val Leu Ile Gly Ala Val Arg Gly Gly His Val Glu Ile Val Arg Ala
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 Leu Leu Gln Lys Tyr Ala Asp Ile Asp Ile Arg Gly Gln Asp Asn Lys
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 Thr Ala Leu Tyr Trp Ala Val Glu Lys Gly Asn Ala Thr Met Val Arg
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 Asp Ile Leu Gln Cys Asn Pro Asp Thr Glu Ile Cys Thr Lys Asp Gly
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 Glu Thr Pro Leu Ile Lys Ala Thr Lys Met Arg Asn Ile Glu Val Val
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 Glu Leu Leu Leu Asp Lys Gly Ala Lys Val Ser Ala Val Asp Lys Lys
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 Gly Asp Thr Pro Leu His Val Ala Ile Arg Gly Arg Ser Arg Arg Leu
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Ala Glu Leu Leu Leu Arg Asn Pro Lys Asp Gly Arg Leu Leu Tyr Arg
385 390 395 400

Pro Asn Lys Ala Gly Glu Thr Pro Tyr Asn Ile Asp Cys Ser His Gln
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Lys Ser Ile Leu Thr Gln Ile Phe Gly Ala Arg His Leu Ser Pro Thr
420 425 430

Glu Thr Asp Gly Asp Met Leu Gly Tyr Asp Leu Tyr Ser Ser Ala Leu
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Ala Asp Ile Leu Ser Glu Pro Thr Met Gln Pro Pro Ile Cys Val Gly
450 455 460

Leu Tyr Ala Gln Trp Gly Ser Gly Lys Ser Phe Leu Leu Lys Lys Leu
465 470 475 480

Glu Asp Glu Met Lys Thr Phe Ala Gly Gln Gln Thr Glu Pro Leu Phe
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Gln Phe Ser Trp Leu Ile Val Phe Leu Thr Leu Leu Leu Cys Gly Gly
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Leu Gly Leu Val Phe Ala Phe Pro Val Asp Thr Asn Leu Ala Ile Ala
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Ile Ser Leu Ser Phe Leu Ala Leu Ile Tyr Ile Phe Phe Ile Val Ile
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Tyr Phe Gly Gly Arg Arg Glu Gly Glu Ser Trp Asn Trp Ala Trp Ala
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Leu Ser Thr Arg Leu Ala Arg His Ile Gly Tyr Leu Glu Leu Leu Phe
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Lys Leu Met Phe Val Asn Pro Pro Glu Leu Pro Glu Gln Thr Thr Lys
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Ala Leu Pro Val Arg Phe Leu Phe Thr Asp Tyr Asn Arg Leu Ser Ser
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Val Gly Gly Glu Thr Ser Leu Ala Glu Met Ile Ala Thr Leu Ser Asp

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Cys Leu Pro Ser Phe Val Ile Phe Leu Phe Ile Val Gly Cys Ile Ile 660 665 670		
Ala Gly Ile Thr Leu Leu Ala Ile Phe Arg Val Asp Pro Lys His Leu 675 680 685		
Thr Val Asn Ala Ile Leu Ile Ser Ile Ala Ser Val Val Gly Leu Ala 690 695 700		
Phe Val Leu Asn Cys Arg Thr Trp Trp Gln Val Leu Asp Ser Leu Leu 705 710 715 720		
Asn Ser Gln Arg Lys Arg Leu His Ser Ala Ala Ser Lys Leu His Lys 725 730 735		
Leu Lys Ser Glu Gly Phe Met Lys Val Leu Lys Cys Glu Val Glu Leu 740 745 750		
Met Ala Arg Met Ala Lys Thr Ile Asp Ser Phe Thr Gln Asn Gln Thr 755 760 765		
Arg Leu Val Val Ile Ile Asp Gly Leu Asp Ala Cys Glu Gln Asp Lys 770 775 780		
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Phe Ile Ala Ile Phe Ala Ser Asp Pro His Ile Ile Ile Lys Ala Ile 805 810 815		
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Asp Tyr Met Arg Asn Ile Val His Leu Pro Val Phe Leu Asn Ser Arg 835 840 845		

Gly Leu Ser Asn Ala Arg Lys Phe Leu Val Thr Ser Ala Thr Asn Gly
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Arg Val Ser Gln Asn Ser Leu Gly Glu Met Thr Lys Leu Gly Ser Lys
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Thr Ala Leu Asn Arg Arg Asp Thr Tyr Arg Arg Arg Gln Met Gln Arg
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Glu Asp Trp Phe Ser Asp Ile Ser Pro Gln Thr Met Arg Arg Leu Leu
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945 950 955 960

Phe Asn Trp Asp Arg Leu Ala Ser Trp Ile Asn Leu Thr Glu Gln Trp
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Pro Tyr Arg Thr Ser Trp Leu Ile Leu Tyr Leu Glu Glu Thr Glu Gly
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Leu Pro Asp Gln Met Thr Leu Lys Thr Met Tyr Glu Arg Ile Ser Lys
995 1000 1005

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Gly Asp Ile Arg Asn Phe Glu Val Phe Leu Ser Ser Arg Thr Pro
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Val Leu Val Ala Arg Asp Val Lys Thr Phe Leu Pro Cys Thr Val
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Ala Arg Glu Gln Ile Asn Ile Gly Gly Leu Ala Tyr Pro Pro Leu

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Pro Leu His Glu Gly Pro Pro Arg Pro Pro Ser Gly Tyr Ser Gln				
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Pro Ala Ser Val Cys Ser Ser Ala Ser Phe Asn Gly Pro Phe Pro				
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Gly Gly Val Val Ser Pro Gln Pro His Ser Ser Tyr Tyr Ser Gly				
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Leu Ser Gly Pro Gln His Pro Phe Tyr Asn Arg Ala Ala Val Pro				
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Ala Thr Gly Ser Ser Leu Leu Leu Ser Ser Met Thr Val Asp Val				
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Val Cys Glu Lys Leu Arg Gln Ile Glu Gly Leu Asp Gln Asn Met				
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Met Pro Gln Tyr Cys Thr Thr Ile Lys Lys Ala Asn Ile Asn Gly				
1175		1180		1185
Arg Val Leu Ser Gln Cys Asn Ile Asp Glu Leu Lys Lys Glu Met				
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Ala Met Asn Phe Gly Asp Trp His Leu Phe Arg Ser Met Val Leu				
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Glu Met Arg Ser Val Glu Ser Gln Val Val Pro Glu Asp Pro Arg				
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Phe Leu Asn Glu Asn Ser Ser Ala Pro Val Pro His Gly Glu Ser				
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Ala Arg Arg Ser Ser His Thr Glu Leu Pro Leu Thr Glu Leu Ser				
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Ser Gln Thr Pro Tyr Thr Leu Asn Phe Ser Phe Glu Glu Leu Asn				
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Thr Leu Gly Leu Asp Glu Gly Ala Pro Arg His Ser Asn Leu Ser				
1280		1285		1290

Trp	Gln	Ser	Gln	Thr	Arg	Arg	Thr	Pro	Ser	Leu	Ser	Ser	Leu	Asn
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Ser	Gln	Asp	Ser	Ser	Ile	Glu	Ile	Ser	Lys	Leu	Thr	Asp	Lys	Val
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Gln	Ala	Glu	Tyr	Arg	Asp	Ala	Tyr	Arg	Glu	Tyr	Ile	Ala	Gln	Met
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Ser	Gln	Leu	Glu	Gly	Gly	Thr	Gly	Ser	Ser	Thr	Ile	Ser	Gly	Arg
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Gly	Asp	Val	Ile	Asp	Tyr	Ser	Ser	Ser	Gly	Val	Ser	Thr	Asn	Glu
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Ala	Ser	Pro	Leu	Asp	Pro	Ile	Thr	Glu	Glu	Asp	Glu	Lys	Ser	Asp
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Gln	Ser	Gly	Ser	Lys	Leu	Leu	Pro	Gly	Lys	Lys	Ser	Ser	Glu	Arg
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Pro	Ser	Leu	Phe	Gln	Thr	Asp	Leu	Lys	Leu	Lys	Gly	Gly	Gly	Leu
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Arg	Leu	Lys	Ala	Lys	Gln	Arg	Glu	Cys	Ala	Ser	Pro	Gln	Glu	His
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Ser	Ala	Glu	Pro	Ile	Arg	Thr	Phe	Ile	Lys	Ala	Lys	Glu	Tyr	Leu

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Ser Asp Ala Leu Leu Asp Lys Lys Asp Ser Ser Asp Ser Gly Val				
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Arg Ser Asn Glu Ser Ser Pro Asn His Ser Leu His Asn Glu Ala				
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Ala Asp Asp Ser Gln Leu Glu Lys Ala Asn Leu Ile Glu Leu Glu				
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Asp Glu Gly His Ser Gly Lys Arg Gly Met Pro His Ser Leu Ser				
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Gly Leu Gln Asp Pro Ile Ile Ala Arg Met Ser Ile Cys Ser Glu				
1580		1585		1590
Asp Lys Lys Ser Pro Ser Glu Cys Ser Leu Ile Ala Ser Ser Pro				
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Glu Glu Ser Trp Pro Ala Cys Gln Lys Ala Tyr Asn Leu Asn Arg				
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Thr Pro Ser Thr Val Thr Leu Asn Asn Asn Thr Ala Pro Thr Asn				
1625		1630		1635
Arg Ala Asn Gln Asn Phe Asp Glu Ile Glu Gly Ile Arg Glu Thr				
1640		1645		1650
Ser Gln Val Ile Leu Arg Pro Gly Pro Ser Pro Asn Pro Thr Ala				
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Val Gln Asn Glu Asn Leu Lys Ser Met Ala His Lys Arg Ser Gln				
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Arg Ser Ser Tyr Thr Arg Leu Ser Lys Asp Ala Ser Glu Leu His				
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His	Leu	Glu	Cys	Val	Lys	His	Leu	Leu	Ala	Met	Gly	Ala	Asp	Val	Asp	
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caa	gaa	gga	gct	aat	tca	atg	act	gca	ctt	att	gtg	gca	gtg	aaa	gga	799
Gln	Glu	Gly	Ala	Asn	Ser	Met	Thr	Ala	Leu	Ile	Val	Ala	Val	Lys	Gly	
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Gly	Tyr	Thr	Gln	Ser	Val	Lys	Glu	Ile	Leu	Lys	Arg	Asn	Pro	Asn	Val	
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aac	tta	aca	gat	aaa	gat	gga	aat	aca	gct	ttg	atg	att	gca	tca	aag	895
Asn	Leu	Thr	Asp	Lys	Asp	Gly	Asn	Thr	Ala	Leu	Met	Ile	Ala	Ser	Lys	
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gag	gga	cat	acg	gag	att	gtg	cag	gat	ctg	ctc	gac	gct	gga	aca	tat	943
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Val	Asn	Ile	Pro	Asp	Arg	Ser	Gly	Asp	Thr	Val	Leu	Ile	Gly	Ala	Val	
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Arg	Gly	Gly	His	Val	Glu	Ile	Val	Arg	Ala	Leu	Leu	Gln	Lys	Tyr	Ala	
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Asp	Ile	Asp	Ile	Arg	Gly	Gln	Asp	Asn	Lys	Thr	Ala	Leu	Tyr	Trp	Ala	
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Val	Glu	Lys	Gly	Asn	Ala	Thr	Met	Val	Arg	Asp	Ile	Leu	Gln	Cys	Asn	
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Pro	Asp	Thr	Glu	Ile	Cys	Thr	Lys	Asp	Gly	Glu	Thr	Pro	Leu	Ile	Lys	
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Ala	Thr	Lys	Met	Arg	Asn	Ile	Glu	Val	Val	Glu	Leu	Leu	Leu	Asp	Lys	
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ggc	gct	aaa	gtg													

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Asn Pro Lys Asp Gly Arg Leu Leu Tyr Arg Pro Asn Lys Ala Gly Glu	
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Thr Pro Tyr Asn Ile Asp Cys Ser His Gln Lys Ser Ile Leu Thr Gln	
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ata ttt gga gcc aga cac ttg tct cct act gaa aca gac ggt gac atg	1471
Ile Phe Gly Ala Arg His Leu Ser Pro Thr Glu Thr Asp Gly Asp Met	
425 430 435	
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Leu Gly Tyr Asp Leu Tyr Ser Ser Ala Leu Ala Asp Ile Leu Ser Glu	
440 445 450	
cct acc atg cag cca ccc att tgt gtg ggg tta tat gca cag tgg gga	1567
Pro Thr Met Gln Pro Pro Ile Cys Val Gly Leu Tyr Ala Gln Trp Gly	
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Ser Gly Lys Ser Phe Leu Leu Lys Lys Leu Glu Asp Glu Met Lys Thr	
475 480 485	
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Phe Ala Gly Gln Gln Ile Glu Pro Leu Phe Gln Phe Ser Trp Leu Ile	
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Val Phe Leu Thr Leu Leu Leu Cys Gly Gly Leu Gly Leu Leu Phe Ala	
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520 525 530	
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Ala Leu Leu Tyr Ile Phe Phe Ile Val Ile Tyr Phe Gly Gly Arg Arg	
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Glu Gly Glu Ser Trp Asn Trp Ala Trp Val Leu Ser Thr Arg Leu Ala	
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Arg His Ile Gly Tyr Leu Glu Leu Leu Leu Lys Leu Met Phe Val Asn	
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Pro Pro Glu Leu Pro Glu Gln Thr Thr Lys Ala Leu Pro Val Arg Phe	
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Leu Phe Thr Asp Tyr Asn Arg Leu Ser Ser Val Gly Gly Glu Thr Ser	
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Leu	Ala	Glu	Met	Ile	Ala	Thr	Leu	Ser	Asp	Ala	Cys	Glu	Arg	Glu	Phe		
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ggc	ttt	ttg	gca	acc	agg	ctt	ttt	cga	gta	ttc	aag	act	gaa	gat	act	2095	
Gly	Phe	Leu	Ala	Thr	Arg	Leu	Phe	Arg	Val	Phe	Lys	Thr	Glu	Asp	Thr		
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cag	ggt	aaa	aag	aaa	tgg	aaa	aaa	aca	tgt	tgt	ctc	cca	tct	ttt	gtc	2143	
Gln	Gly	Lys	Lys	Lys	Trp	Lys	Lys	Thr	Cys	Cys	Leu	Pro	Ser	Phe	Val		
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Ile	Phe	Leu	Phe	Ile	Ile	Gly	Cys	Ile	Ile	Ser	Gly	Ile	Thr	Leu	Leu		
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Thr	Trp	Trp	Gln	Val	Leu	Asp	Ser	Leu	Leu	Asn	Ser	Gln	Arg	Lys	Arg		
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Leu	His	Asn	Ala	Ala	Ser	Lys	Leu	His	Lys	Leu	Lys	Ser	Glu	Gly	Phe		
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Met	Lys	Val	Leu	Lys	Cys	Glu	Val	Glu	Leu	Met	Ala	Arg	Met	Ala	Lys		
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acc	att	gac	agc	ttc	act	cag	aat	cag	aca	agg	ctg	gtg	gtc	atc	atc	2479	
Thr	Ile	Asp	Ser	Phe	Thr	Gln	Asn	Gln	Thr	Arg	Leu	Val	Val	Ile	Ile		
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gat	gga	tta	gat	gcc	tgt	gag	cag	gac	aaa	gtc	ctt	cag	atg	ctg	gac	2527	
Asp	Gly	Leu	Asp	Ala	Cys	Glu	Gln	Asp	Lys	Val	Leu	Gln	Met	Leu	Asp		
775				780						785				790			
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Thr	Val	Arg	Val	Leu	Phe	Ser	Lys	Gly	Pro	Phe	Ile	Ala	Ile	Phe	Ala		
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Ser	Asp	Pro	His	Ile	Ile	Ile	Lys	Ala	Ile	Asn	Gln	Asn	Leu	Asn	Ser		
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Val	Leu	Arg	Asp	Ser	Asn	Ile	Asn	Gly	His	Asp	Tyr	Met	Arg	Asn	Ile		
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act Thr 875	aca Thr 875	ggg Gly 875	ata Ile 875	cag Gln 875	gaa Glu 875	gat Asp 875	gct Ala 875	gac Asp 880	aga Arg 880	aga Arg 880	gtt Val 880	tca Ser 885	cag Gln 885	aac Asn 885	agc Ser 885	2815
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gac Asp 905	act Thr 905	tac Tyr 905	cga Arg 905	aga Arg 905	agg Arg 905	cag Gln 910	atg Met 910	cag Gln 910	agg Arg 910	acc Thr 910	atc Ile 915	act Thr 915	cgc Arg 915	cag Gln 915	atg Met 915	2911
tcc Ser 920	ttt Phe 920	gat Asp 920	ctt Leu 920	aca Thr 920	aaa Lys 925	ctg Leu 925	ctg Leu 925	gtt Val 925	acc Thr 930	gag Glu 930	gac Asp 930	tgg Trp 930	ttc Phe 930	agt Ser 930	gac Asp 930	2959
atc Ile 935	agt Ser 935	ccc Pro 935	cag Gln 935	acc Thr 935	atg Met 940	aga Arg 940	aga Arg 940	tta Leu 940	ctt Leu 940	aat Asn 945	att Ile 945	gtt Val 945	tct Ser 945	gtg Val 945	aca Thr 950	3007
gga Gly 955	cga Arg 955	tta Leu 955	ctg Leu 955	aga Arg 955	gcc Ala 955	aat Asn 955	cag Gln 955	att Ile 955	agt Ser 960	ttc Phe 960	aac Asn 960	tgg Trp 960	gac Asp 965	agg Arg 965	ctt Leu 965	3055
gct Ala 970	agc Ser 970	tgg Trp 970	atc Ile 970	aac Asn 970	ctt Leu 970	act Thr 970	gag Glu 975	cag Gln 975	tgg Trp 975	cca Pro 975	tac Tyr 975	cgg Arg 975	act Thr 980	tca Ser 980	tgg Trp 980	3103
ctc Leu 985	ata Ile 985	tta Leu 985	tat Tyr 985	ttg Leu 985	gaa Glu 985	gag Glu 985	act Thr 990	gaa Glu 990	ggt Gly 990	att Ile 990	cca Pro 995	gat Asp 995	caa Gln 995	atg Met 995	aca Thr 995	3151
tta Leu 1000	aaa Lys 1000	acc Thr 1000	atc Ile 1000	tac Tyr 1000	gaa Glu 1005	aga Arg 1005	ata Ile 1005	tca Ser 1005	aag Lys 1005	aat Asn 1005	att Ile 1010	cca Pro 1010	aca Thr 1010	act Thr 1010		3196
aag Lys 1015	gat Asp 1015	gtt Val 1015	gag Glu 1015	cca Pro 1015	ctt Leu 1020	ctt Leu 1020	gaa Glu 1020	att Ile 1020	gat Asp 1025	gga Gly 1025	gat Asp 1025	ata Ile 1025	aga Arg 1025	aat Asn 1025		3241
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gat Asp 1045	gta Val 1045	aaa Lys 1045	gtc Val 1045	ttt Phe 1045	ttg Leu 1050	cca Pro 1050	tgc Cys 1050	act Thr 1050	gta Val 1050	aac Asn 1050	cta Leu 1055	gat Asp 1055	ccc Pro 1055	aaa Lys 1055		3331
cta Leu 1060	cgg Arg 1060	gaa Glu 1060	att Ile 1060	att Ile 1060	gca Ala 1065	gat Asp 1065	gtt Val 1065	cgt Arg 1065	gct Ala 1065	gcc Ala 1065	aga Arg 1070	gag Glu 1070	cag Gln 1070	atc Ile 1070		3376
aqt Leu 3421	att Leu 3421	gga Glu 3421	gga Glu 3421	ctg Gln 3421	gcg Glu 3421	tac Gln 3421	ccc Pro 3421	ccg Pro 3421	ctc Leu 3421	cct Leu 3421	cta Leu 3421	cat Leu 3421	gag Glu 3421	ggt Glu 3421		3421

Ser	Ile	Gly	Gly	Leu	Ala	Tyr	Pro	Pro	Leu	Pro	Leu	His	Glu	Gly			
1075						1080					1085						
cct	cct	agg	gcg	cca	tca	ggg	tac	agc	cag	ccc	cca	tcc	gtg	tgc		3466	
Pro	Pro	Arg	Ala	Pro	Ser	Gly	Tyr	Ser	Gln	Pro	Pro	Ser	Val	Cys			
1090						1095					1100						
tct	tcc	acg	tcc	ttc	aat	ggg	ccc	ttc	gca	ggg	gga	gtg	gtg	tca		3511	
Ser	Ser	Thr	Ser	Phe	Asn	Gly	Pro	Phe	Ala	Gly	Gly	Val	Val	Ser			
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cca	cag	cct	cac	agc	agc	tat	tac	agc	ggc	atg	acg	ggc	cct	cag		3556	
Pro	Gln	Pro	His	Ser	Ser	Tyr	Tyr	Ser	Gly	Met	Thr	Gly	Pro	Gln			
1120						1125					1130						
cat	ccc	ttc	tac	aac	agg	ggg	tca	ggc	cca	gcc	cca	ggc	cca	gtg		3601	
His	Pro	Phe	Tyr	Asn	Arg	Gly	Ser	Gly	Pro	Ala	Pro	Gly	Pro	Val			
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gta	tta	ctg	aat	tca	ctg	aat	gtg	gat	gca	gta	tgt	gag	aag	ctg		3646	
Val	Leu	Leu	Asn	Ser	Leu	Asn	Val	Asp	Ala	Val	Cys	Glu	Lys	Leu			
1150						1155					1160						
aaa	caa	ata	gaa	ggg	ctg	gac	cag	agt	atg	ctg	cct	cag	tat	tgt		3691	
Lys	Gln	Ile	Glu	Gly	Leu	Asp	Gln	Ser	Met	Leu	Pro	Gln	Tyr	Cys			
1165						1170					1175						
acc	acg	atc	aaa	aag	gca	aac	ata	aat	ggc	cgt	gtg	tta	gct	cag		3736	
Thr	Thr	Ile	Lys	Lys	Ala	Asn	Ile	Asn	Gly	Arg	Val	Leu	Ala	Gln			
1180						1185					1190						
tgt	aac	att	gat	gag	ctg	aag	aaa	gag	atg	aat	atg	aat	ttt	gga		3781	
Cys	Asn	Ile	Asp	Glu	Leu	Lys	Lys	Glu	Met	Asn	Met	Asn	Phe	Gly			
1195						1200					1205						
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Asp	Trp	His	Leu	Phe	Arg	Ser	Thr	Val	Leu	Glu	Met	Arg	Asn	Ala			
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gaa	agc	cac	gtg	gtc	cct	gaa	gac	cca	cgt	ttc	ctc	agt	gag	agc		3871	
Glu	Ser	His	Val	Val	Pro	Glu	Asp	Pro	Arg	Phe	Leu	Ser	Glu	Ser			
1225						1230					1235						
agc	agt	ggc	cca	gcc	ccg	cac	ggg	gag	cct	gct	cgc	cgc	gct	tcc		3916	
Ser	Ser	Gly	Pro	Ala	Pro	His	Gly	Glu	Pro	Ala	Arg	Arg	Ala	Ser			
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His	Asn	Glu	Leu	Pro	His	Thr	Glu	Leu	Ser	Ser	Gln	Thr	Pro	Tyr			
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aca	ctc	aac	ttc	agc	ttc	gaa	gag	ctg	aac	acg	ctt	ggc	ctg	gat		4006	
Thr	Leu	Asn	Phe	Ser	Phe	Glu	Glu	Leu	Asn	Thr	Leu	Gly	Leu	Asp			
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Glu	Gly	Ala	Pro	Arg	His	Ser	Asn	Leu	Ser	Trp	Gln	Ser	Gln	Thr			
1285						1290					1295						

cgc aga acc cca agt ctt tcg	agt ctc aat tcc cag	gat tcc agt	4096
Arg Arg Thr Pro Ser Leu Ser	Ser Leu Asn Ser Gln	Asp Ser Ser	
1300	1305	1310	
att gaa att tca aag ctt act	gat aag gtg cag gcc	gag tat aga	4141
Ile Glu Ile Ser Lys Leu Thr	Asp Lys Val Gln Ala	Glu Tyr Arg	
1315	1320	1325	
gat gcc tat aga gaa tac att	gct cag atg tcc cag	tta gaa ggg	4186
Asp Ala Tyr Arg Glu Tyr Ile	Ala Gln Met Ser Gln	Leu Glu Gly	
1330	1335	1340	
ggc ccc ggg tct aca acc att	agt ggc aga tct tct	cca cat agc	4231
Gly Pro Gly Ser Thr Thr Ile	Ser Gly Arg Ser Ser	Pro His Ser	
1345	1350	1355	
aca tat tac atg ggt cag agt	tca tca ggg ggc tct	att cat tca	4276
Thr Tyr Tyr Met Gly Gln Ser	Ser Ser Gly Gly Ser	Ile His Ser	
1360	1365	1370	
aac cta gag caa gaa aag ggg	aag gat agt gaa cca	aag ccc gat	4321
Asn Leu Glu Gln Glu Lys Gly	Lys Asp Ser Glu Pro	Lys Pro Asp	
1375	1380	1385	
gat ggg agg aag tcc ttt cta	atg aag agg gga gat	gtt atc gat	4366
Asp Gly Arg Lys Ser Phe Leu	Met Lys Arg Gly Asp	Val Ile Asp	
1390	1395	1400	
tat tca tca tca ggg gtt tcc	acc aac gat gct tcc	ccc ctg gat	4411
Tyr Ser Ser Ser Gly Val Ser	Thr Asn Asp Ala Ser	Pro Leu Asp	
1405	1410	1415	
cct atc act gaa gaa gat gaa	aaa tca gat cag tca	ggc agt aag	4456
Pro Ile Thr Glu Glu Asp Glu	Lys Ser Asp Gln Ser	Gly Ser Lys	
1420	1425	1430	
ctt ctc cca ggc aag aaa tct	tcc gaa agg tca agc	ctc ttc cag	4501
Leu Leu Pro Gly Lys Lys Ser	Ser Glu Arg Ser Ser	Leu Phe Gln	
1435	1440	1445	
aca gat ttg aag ctt aag gga	agt ggg ctg cgc tat	caa aaa ctc	4546
Thr Asp Leu Lys Leu Lys Gly	Ser Gly Leu Arg Tyr	Gln Lys Leu	
1450	1455	1460	
cca agt gac gag gat gaa tct	ggc aca gaa gaa tca	gat aac act	4591
Pro Ser Asp Glu Asp Glu Ser	Gly Thr Glu Glu Ser	Asp Asn Thr	
1465	1470	1475	
cca ctg ctc aaa gat gac aaa	gac aga aaa gcc gaa	ggg aaa gta	4636
Pro Leu Leu Lys Asp Asp Lys	Asp Arg Lys Ala Glu	Gly Lys Val	
1480	1485	1490	
gag aga gtg ccg aag tct cca	gaa cac agt gct gag	ccg atc aga	4681
Glu Arg Val Pro Lys Ser Pro	Glu His Ser Ala Glu	Pro Ile Arg	
1495	1500	1505	
acc ttc att aaa gcc aaa gag	tat tta tcg gat gcg	ctc ctt gac	4726

Thr	Phe	Ile	Lys	Ala	Lys	Glu	Tyr	Leu	Ser	Asp	Ala	Leu	Leu	Asp	
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Lys	Lys	Asp	Ser	Ser	Asp	Ser	Gly	Val	Arg	Ser	Ser	Glu	Ser	Ser	
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ccc	aat	cac	tct	ctg	cac	aat	gaa	gtg	gcg	gat	gac	tcc	cag	ctt	4816
Pro	Asn	His	Ser	Leu	His	Asn	Glu	Val	Ala	Asp	Asp	Ser	Gln	Leu	
1540						1545					1550				
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Glu	Lys	Ala	Asn	Leu	Ile	Glu	Leu	Glu	Asp	Asp	Ser	His	Ser	Gly	
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aag	cgg	gga	atc	cca	cat	agc	ctg	agt	ggc	ctg	caa	gat	cca	att	4906
Lys	Arg	Gly	Ile	Pro	His	Ser	Leu	Ser	Gly	Leu	Gln	Asp	Pro	Ile	
1570						1575					1580				
ata	gct	cgg	atg	tcc	att	tgt	tca	gaa	gac	aag	aaa	agc	cct	tcc	4951
Ile	Ala	Arg	Met	Ser	Ile	Cys	Ser	Glu	Asp	Lys	Lys	Ser	Pro	Ser	
1585						1590					1595				
gaa	tgc	agc	ttg	ata	gcc	agc	agc	cct	gaa	gaa	aac	tggt	cct	gca	4996
Glu	Cys	Ser	Leu	Ile	Ala	Ser	Ser	Pro	Glu	Glu	Asn	Trp	Pro	Ala	
1600						1605					1610				
tgc	cag	aaa	gcc	tac	aac	ctg	aac	cga	act	ccc	agc	acc	gtg	act	5041
Cys	Gln	Lys	Ala	Tyr	Asn	Leu	Asn	Arg	Thr	Pro	Ser	Thr	Val	Thr	
1615						1620					1625				
ctg	aac	aac	aat	agt	gct	cca	gcc	aac	aga	gcc	aat	caa	aat	ttc	5086
Leu	Asn	Asn	Asn	Ser	Ala	Pro	Ala	Asn	Arg	Ala	Asn	Gln	Asn	Phe	
1630						1635					1640				
gat	gag	atg	gag	gga	att	agg	gag	act	tct	caa	gtc	att	ttg	agg	5131
Asp	Glu	Met	Glu	Gly	Ile	Arg	Glu	Thr	Ser	Gln	Val	Ile	Leu	Arg	
1645						1650					1655				
cct	agt	tcc	agt	ccc	aac	cca	acc	act	att	cag	aat	gag	aat	cta	5176
Pro	Ser	Ser	Ser	Pro	Asn	Pro	Thr	Thr	Ile	Gln	Asn	Glu	Asn	Leu	
1660						1665					1670				
aaa	agc	atg	aca	cat	aag	cga	agc	caa	cgt	tca	agt	tac	aca	agg	5221
Lys	Ser	Met	Thr	His	Lys	Arg	Ser	Gln	Arg	Ser	Ser	Tyr	Thr	Arg	
1675						1680					1685				
ctc	tcc	aaa	gat	cct	ccg	gag	ctc	cat	gca	gca	gcc	tct	tct	gag	5266
Leu	Ser	Lys	Asp	Pro	Pro	Glu	Leu	His	Ala	Ala	Ala	Ser	Ser	Glu	
1690						1695					1700				
agc	aca	ggc	ttt	gga	gaa	gaa	aga	gaa	agc	att	ctt	tga			5305
Ser	Thr	Gly	Phe	Gly	Glu	Glu	Arg	Glu	Ser	Ile	Leu				
1705						1710					1715				

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$\langle 211 \rangle$	1715

<212> PRT

<213> Homo sapiens

<400> 4

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Asn Ile Pro Ala Leu Lys Ala Leu Leu Glu Lys Cys Lys Asp Val Asp
20 25 30

Glu Arg Asn Glu Cys Gly Gln Thr Pro Leu Met Ile Ala Ala Glu Gln
35 40 45

Gly Asn Leu Glu Ile Val Lys Glu Leu Ile Lys Asn Gly Ala Asn Cys
50 55 60

Asn Leu Glu Asp Leu Asp Asn Trp Thr Ala Leu Ile Ser Ala Ser Lys
65 70 75 80

Glu Gly His Val His Ile Val Glu Glu Leu Leu Lys Cys Gly Val Asn
85 90 95

Leu Glu His Arg Asp Met Gly Gly Trp Thr Ala Leu Met Trp Ala Cys
100 105 110

Tyr Lys Gly Arg Thr Asp Val Val Glu Leu Leu Leu Ser His Gly Ala
115 120 125

Asn Pro Ser Val Thr Gly Leu Gln Tyr Ser Val Tyr Pro Ile Ile Trp
130 135 140

Ala Ala Gly Arg Gly His Ala Asp Ile Val His Leu Leu Leu Gln Asn
145 150 155 160

Gly Ala Lys Val Asn Cys Ser Asp Lys Tyr Gly Thr Thr Pro Leu Val
165 170 175

Trp Ala Ala Arg Lys Gly His Leu Glu Cys Val Lys His Leu Leu Ala
180 185 190

Met Gly Ala Asp Val Asp Gln Glu Gly Ala Asn Ser Met Thr Ala Leu
195 200 205

Ile Val Ala Val Lys Gly Gly Tyr Thr Gln Ser Val Lys Glu Ile Leu

210	215	220
Lys Arg Asn Pro Asn Val Asn Leu Thr Asp Lys Asp Gly Asn Thr Ala		
225	230	235 240
Leu Met Ile Ala Ser Lys Glu Gly His Thr Glu Ile Val Gln Asp Leu		
	245	250 255
Leu Asp Ala Gly Thr Tyr Val Asn Ile Pro Asp Arg Ser Gly Asp Thr		
	260	265 270
Val Leu Ile Gly Ala Val Arg Gly Gly His Val Glu Ile Val Arg Ala		
	275	280 285
Leu Leu Gln Lys Tyr Ala Asp Ile Asp Ile Arg Gly Gln Asp Asn Lys		
	290	295 300
Thr Ala Leu Tyr Trp Ala Val Glu Lys Gly Asn Ala Thr Met Val Arg		
	310	315 320
Asp Ile Leu Gln Cys Asn Pro Asp Thr Glu Ile Cys Thr Lys Asp Gly		
	325	330 335
Glu Thr Pro Leu Ile Lys Ala Thr Lys Met Arg Asn Ile Glu Val Val		
	340	345 350
Glu Leu Leu Leu Asp Lys Gly Ala Lys Val Ser Ala Val Asp Lys Lys		
	355	360 365
Gly Asp Thr Pro Leu His Ile Ala Ile Arg Gly Arg Ser Arg Lys Leu		
	370	375 380
Ala Glu Leu Leu Leu Arg Asn Pro Lys Asp Gly Arg Leu Leu Tyr Arg		
	385	390 395 400
Pro Asn Lys Ala Gly Glu Thr Pro Tyr Asn Ile Asp Cys Ser His Gln		
	405	410 415
Lys Ser Ile Leu Thr Gln Ile Phe Gly Ala Arg His Leu Ser Pro Thr		
	420	425 430
Glu Thr Asp Gly Asp Met Leu Gly Tyr Asp Leu Tyr Ser Ser Ala Leu		
	435	440 445

Ala Asp Ile Leu Ser Glu Pro Thr Met Gln Pro Pro Ile Cys Val Gly
 450 455 460

Leu Tyr Ala Gln Trp Gly Ser Gly Lys Ser Phe Leu Leu Lys Lys Leu
 465 470 475 480

Glu Asp Glu Met Lys Thr Phe Ala Gly Gln Gln Ile Glu Pro Leu Phe
 485 490 495

Gln Phe Ser Trp Leu Ile Val Phe Leu Thr Leu Leu Leu Cys Gly Gly
 500 505 510

Leu Gly Leu Leu Phe Ala Phe Thr Val His Pro Asn Leu Gly Ile Ala
 515 520 525

Val Ser Leu Ser Phe Leu Ala Leu Leu Tyr Ile Phe Phe Ile Val Ile
 530 535 540

Tyr Phe Gly Gly Arg Arg Glu Gly Glu Ser Trp Asn Trp Ala Trp Val
 545 550 555 560

Leu Ser Thr Arg Leu Ala Arg His Ile Gly Tyr Leu Glu Leu Leu Leu
 565 570 575

Lys Leu Met Phe Val Asn Pro Pro Glu Leu Pro Glu Gln Thr Thr Lys
 580 585 590

Ala Leu Pro Val Arg Phe Leu Phe Thr Asp Tyr Asn Arg Leu Ser Ser
 595 600 605

Val Gly Gly Glu Thr Ser Leu Ala Glu Met Ile Ala Thr Leu Ser Asp
 610 615 620

Ala Cys Glu Arg Glu Phe Gly Phe Leu Ala Thr Arg Leu Phe Arg Val
 625 630 635 640

Phe Lys Thr Glu Asp Thr Gln Gly Lys Lys Lys Trp Lys Lys Thr Cys
 645 650 655

Cys Leu Pro Ser Phe Val Ile Phe Leu Phe Ile Ile Gly Cys Ile Ile
 660 665 670

Ser Gly Ile Thr Leu Leu Ala Ile Phe Arg Val Asp Pro Lys His Leu

675	680	685
Thr Val Asn Ala Val Leu Ile Ser Ile Ala Ser Val Val Gly Leu Ala 690 695 700		
Phe Val Leu Asn Cys Arg Thr Trp Trp Gln Val Leu Asp Ser Leu Leu 705 710 715 720		
Asn Ser Gln Arg Lys Arg Leu His Asn Ala Ala Ser Lys Leu His Lys 725 730 735		
Leu Lys Ser Glu Gly Phe Met Lys Val Leu Lys Cys Glu Val Glu Leu 740 745 750		
Met Ala Arg Met Ala Lys Thr Ile Asp Ser Phe Thr Gln Asn Gln Thr 755 760 765		
Arg Leu Val Val Ile Ile Asp Gly Leu Asp Ala Cys Glu Gln Asp Lys 770 775 780		
Val Leu Gln Met Leu Asp Thr Val Arg Val Leu Phe Ser Lys Gly Pro 785 790 795 800		
Phe Ile Ala Ile Phe Ala Ser Asp Pro His Ile Ile Ile Lys Ala Ile 805 810 815		
Asn Gln Asn Leu Asn Ser Val Leu Arg Asp Ser Asn Ile Asn Gly His 820 825 830		
Asp Tyr Met Arg Asn Ile Val His Leu Pro Val Phe Leu Asn Ser Arg 835 840 845		
Gly Leu Ser Asn Ala Arg Lys Phe Leu Val Thr Ser Ala Thr Asn Gly 850 855 860		
Asp Val Pro Cys Ser Asp Thr Thr Gly Ile Gln Glu Asp Ala Asp Arg 865 870 875 880		
Arg Val Ser Gln Asn Ser Leu Gly Glu Met Thr Lys Leu Gly Ser Lys 885 890 895		
Thr Ala Leu Asn Arg Arg Asp Thr Tyr Arg Arg Arg Gln Met Gln Arg 900 905 910		

Thr Ile Thr Arg Gln Met Ser Phe Asp Leu Thr Lys Leu Leu Val Thr
915 920 925

Glu Asp Trp Phe Ser Asp Ile Ser Pro Gln Thr Met Arg Arg Leu Leu
930 935 940

Asn Ile Val Ser Val Thr Gly Arg Leu Leu Arg Ala Asn Gln Ile Ser
945 950 955 960

Phe Asn Trp Asp Arg Leu Ala Ser Trp Ile Asn Leu Thr Glu Gln Trp
965 970 975

Pro Tyr Arg Thr Ser Trp Leu Ile Leu Tyr Leu Glu Glu Thr Glu Gly
980 985 990

Ile Pro Asp Gln Met Thr Leu Lys Thr Ile Tyr Glu Arg Ile Ser Lys
995 1000 1005

Asn Ile Pro Thr Thr Lys Asp Val Glu Pro Leu Leu Glu Ile Asp
1010 1015 1020

Gly Asp Ile Arg Asn Phe Glu Val Phe Leu Ser Ser Arg Thr Pro
1025 1030 1035

Val Leu Val Ala Arg Asp Val Lys Val Phe Leu Pro Cys Thr Val
1040 1045 1050

Asn Leu Asp Pro Lys Leu Arg Glu Ile Ile Ala Asp Val Arg Ala
1055 1060 1065

Ala Arg Glu Gln Ile Ser Ile Gly Gly Leu Ala Tyr Pro Pro Leu
1070 1075 1080

Pro Leu His Glu Gly Pro Pro Arg Ala Pro Ser Gly Tyr Ser Gln
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Pro Pro Ser Val Cys Ser Ser Thr Ser Phe Asn Gly Pro Phe Ala
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Gly Gly Val Val Ser Pro Gln Pro His Ser Ser Tyr Tyr Ser Gly
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Met Thr Gly Pro Gln His Pro Phe Tyr Asn Arg Gly Ser Gly Pro

1130		1135		1140
Ala Pro Gly Pro Val Val Leu	Leu Asn Ser Leu Asn	Val Asp Ala		
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Val Cys Glu Lys Leu Lys Gln	Ile Glu Gly Leu Asp	Gln Ser Met		
1160	1165	1170		
Leu Pro Gln Tyr Cys Thr Thr	Ile Lys Lys Ala Asn	Ile Asn Gly		
1175	1180	1185		
Arg Val Leu Ala Gln Cys Asn	Ile Asp Glu Leu Lys	Lys Glu Met		
1190	1195	1200		
Asn Met Asn Phe Gly Asp Trp	His Leu Phe Arg Ser	Thr Val Leu		
1205	1210	1215		
Glu Met Arg Asn Ala Glu Ser	His Val Val Pro Glu	Asp Pro Arg		
1220	1225	1230		
Phe Leu Ser Glu Ser Ser Ser	Gly Pro Ala Pro His	Gly Glu Pro		
1235	1240	1245		
Ala Arg Arg Ala Ser His Asn	Glu Leu Pro His Thr	Glu Leu Ser		
1250	1255	1260		
Ser Gln Thr Pro Tyr Thr Leu	Asn Phe Ser Phe Glu	Glu Leu Asn		
1265	1270	1275		
Thr Leu Gly Leu Asp Glu Gly	Ala Pro Arg His Ser	Asn Leu Ser		
1280	1285	1290		
Trp Gln Ser Gln Thr Arg Arg	Thr Pro Ser Leu Ser	Ser Leu Asn		
1295	1300	1305		
Ser Gln Asp Ser Ser Ile Glu	Ile Ser Lys Leu Thr	Asp Lys Val		
1310	1315	1320		
Gln Ala Glu Tyr Arg Asp Ala	Tyr Arg Glu Tyr Ile	Ala Gln Met		
1325	1330	1335		
Ser Gln Leu Glu Gly Gly Pro	Gly Ser Thr Thr Ile	Ser Gly Arg		
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Ser Ser Pro His Ser Thr Tyr Tyr Met Gly Gln Ser Ser Ser Gly
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Gly Ser Ile His Ser Asn Leu Glu Gln Glu Lys Gly Lys Asp Ser
 1370 1375 1380

Glu Pro Lys Pro Asp Asp Gly Arg Lys Ser Phe Leu Met Lys Arg
 1385 1390 1395

Gly Asp Val Ile Asp Tyr Ser Ser Ser Gly Val Ser Thr Asn Asp
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Ala Ser Pro Leu Asp Pro Ile Thr Glu Glu Asp Glu Lys Ser Asp
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Gln Ser Gly Ser Lys Leu Leu Pro Gly Lys Lys Ser Ser Glu Arg
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Ser Ser Leu Phe Gln Thr Asp Leu Lys Leu Lys Gly Ser Gly Leu
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Arg Tyr Gln Lys Leu Pro Ser Asp Glu Asp Glu Ser Gly Thr Glu
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Glu Ser Asp Asn Thr Pro Leu Leu Lys Asp Asp Lys Asp Arg Lys
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Ala Glu Gly Lys Val Glu Arg Val Pro Lys Ser Pro Glu His Ser
 1490 1495 1500

Ala Glu Pro Ile Arg Thr Phe Ile Lys Ala Lys Glu Tyr Leu Ser
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Asp Ala Leu Leu Asp Lys Lys Asp Ser Ser Asp Ser Gly Val Arg
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Ser Ser Glu Ser Ser Pro Asn His Ser Leu His Asn Glu Val Ala
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Asp Asp Ser Gln Leu Glu Lys Ala Asn Leu Ile Glu Leu Glu Asp
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Asp Ser His Ser Gly Lys Arg Gly Ile Pro His Ser Leu Ser Gly

ttt Phe	gcc Ala	gtc Val	gcc Ala 20	agt Ser	gct Ala	ctt Leu	ccg Pro	gtg Val 25	act Thr	atg Met	aat Asn	agt Ser	aca Thr 30	caa Gln	att Ile	96
gct Ala	gag Glu	ctc Leu 35	ttc Phe	gaa Glu	cag Gln	gtt Val	gag Glu 40	cat His	ggc Gly	acc Thr	aca Thr 45	gaa Glu	ctc Leu	aga Arg	tgt Cys	144
gca Ala	ctc Leu 50	acc Thr	gca Ala	gaa Glu	ata Ile	tca Ser 55	gct Ala	ctc Leu	aga Arg	aac Asn 60	gct Ala	aat Asn	gga Gly	gaa Glu	tca Ser	192
ctt Leu 65	ctc Leu	aca Thr	gtt Val	gcc Ala 70	gtt Val	cga Arg	tca Ser	gga Gly	aac Asn 75	aca Thr	gca Ala	gtt Val	gcc Ala	aaa Lys	caa Gln 80	240
tta Leu	gca Ala	caa Gln	ttg Leu 85	gat Asp	cca Pro	gac Asp	gca Ala	att Ile 90	gat Asp	gaa Glu	act Thr	gac Asp	aat Asn 95	gaa Glu	ggt Gly	288
tgg Trp	agt Ser	gct Ala 100	ctt Leu	ctg Leu	aat Asn	gca Ala	gct Ala	cac His 105	tgt Cys	ggg Gly	cat His	gtt Val 110	gac Asp	att Ile	gtt Val	336
cga Arg	tta Leu 115	tta Leu	att Ile	gat Asp	aat Asn	gga Gly	gca Ala 120	tct Ser	gtt Val	gat Asp	caa Gln 125	cct Pro	gat Asp	tta Leu	atg Met	384
gga Gly 130	tgg Trp	agt Ser	cct Pro	ctt Leu	atg Met	tgg Trp 135	gca Ala	gtt Val	tat Tyr	aaa Lys 140	aat Asn	cat His	tta Leu	gat Asp	gtg Val	432
gtt Val 145	gat Asp	cta Leu	ctt Leu	gtt Val	aac Asn 150	gca Ala	aaa Lys	gta Val	aat Asn 155	gcc Ala	tgt Cys	gac Asp	aaa Lys	ttc Phe	gga Gly 160	480
agt Ser	act Thr	gca Ala	tta Leu 165	att Ile	tgg Trp	gca Ala	gct Ala	cga Arg 170	aaa Lys	gga Gly	cat His	ctt Leu	cct Pro	gtt Val 175	gta Val	528
caa Gln	cta Leu	ctt Leu 180	tta Leu	aat Asn	tct Ser	gga Gly	gct Ala	gag Glu 185	gtg Val	gat Asp	gca Ala	gtt Val 190	gga Gly	atg Met	tac Tyr	576
tca Ser	tcc Ser 195	aca Thr	gct Ala	tta Leu	atg Met	ttg Leu	gca Ala 200	aca Thr	cgt Arg	gga Gly	aac Asn 205	ttt Phe 210	att Ile	caa Gln	gta Val	624
gtt Val 210	gag Glu	ctt Leu	ctt Leu	ctg Leu	aca Thr	cga Arg 215	gaa Glu	cca Pro	aat Asn 220	gtt Val	aat Asn	gta Val	gct Ala	gat Asp	caa Gln	672
aat Asn 225	ggt Gly	ttg Leu	aca Thr	gct Ala	ctc Leu 230	gga Gly	atg Met	gca Ala	gct Ala 235	cgt Arg	gat Asp	gga Gly	tat Tyr	gct Ala	gat Asp 240	720
ata	tgt	gaa	tct	ctt	att	aat	tcg	ggt	gct	ttt	gtg	aat	cag	tgt	gat	768

Ile	Cys	Glu	Ser	Leu	Ile	Asn	Ser	Gly	Ala	Phe	Val	Asn	Gln	Cys	Asp	816
aga	ttt	gga	aac	tgg	att	ctt	acg	tca	gca	ggt	cga	agt	gga	aat	gcg	
Arg	Phe	Gly	Asn	Trp	Ile	Leu	Thr	Ser	Ala	Val	Arg	Ser	Gly	Asn	Ala	
			260					265					270			
gca	att	gtt	aga	atg	att	ctc	gac	aaa	ttt	gct	gat	atc	aat	tgt	caa	864
Ala	Ile	Val	Arg	Met	Ile	Leu	Asp	Lys	Phe	Ala	Asp	Ile	Asn	Cys	Gln	
			275				280					285				
gac	tct	gaa	aaa	cgg	aca	cca	ctt	cat	ctg	gcc	atc	gat	aaa	tca	ttc	912
Asp	Ser	Glu	Lys	Arg	Thr	Pro	Leu	His	Leu	Ala	Ile	Asp	Lys	Ser	Phe	
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aat	gat	atc	gcc	tac	att	tta	ttg	gag	aaa	aaa	ccg	aat	ttg	gaa	ctg	960
Asn	Asp	Ile	Ala	Tyr	Ile	Leu	Leu	Glu	Lys	Lys	Pro	Asn	Leu	Glu	Leu	
305					310					315					320	
aaa	aat	aag	gac	ggt	gaa	act	cca	ctt	ctt	cgt	gct	gct	aaa	tgt	cgt	1008
Lys	Asn	Lys	Asp	Gly	Glu	Thr	Pro	Leu	Leu	Arg	Ala	Ala	Lys	Cys	Arg	
			325						330					335		
cat	gta	cat	ctg	tgt	acc	tac	ttg	atg	agt	ttc	gga	gct	aaa	ctc	gct	1056
His	Val	His	Leu	Cys	Thr	Tyr	Leu	Met	Ser	Phe	Gly	Ala	Lys	Leu	Ala	
			340					345					350			
gca	gtt	gat	aat	tgt	gga	gat	aat	gca	ctt	cat	ttg	gca	ctg	aga	gca	1104
Ala	Val	Asp	Asn	Cys	Gly	Asp	Asn	Ala	Leu	His	Leu	Ala	Leu	Arg	Ala	
			355				360					365				
cgt	agt	cga	cga	tta	aca	cag	gca	ctt	ttg	tcc	aat	cca	tca	gat	tct	1152
Arg	Ser	Arg	Arg	Leu	Thr	Gln	Ala	Leu	Leu	Ser	Asn	Pro	Ser	Asp	Ser	
			370			375					380					
cgg	tta	ctg	tac	cga	ccc	aat	aag	ctt	ggt	cag	aca	ccg	tat	tcc	att	1200
Arg	Leu	Leu	Tyr	Arg	Pro	Asn	Lys	Leu	Gly	Gln	Thr	Pro	Tyr	Ser	Ile	
385					390					395					400	
gac	tta	tca	aat	cct	caa	cct	att	ctg	cca	cta	att	ttt	gga	cca	att	1248
Asp	Leu	Ser	Asn	Pro	Gln	Pro	Ile	Leu	Pro	Leu	Ile	Phe	Gly	Pro	Ile	
				405					410					415		
gat	gcg	gaa	gat	aaa	atg	gat	aca	gct	atg	gga	tat	gat	gta	tat	tct	1296
Asp	Ala	Glu	Asp	Lys	Met	Asp	Thr	Ala	Met	Gly	Tyr	Asp	Val	Tyr	Ser	
			420					425					430			
aat	gtt	tta	gct	gat	att	gtg	tgt	gaa	cct	tct	ctt	tct	ctt	cca	ctt	1344
Asn	Val	Leu	Ala	Asp	Ile	Val	Cys	Glu	Pro	Ser	Leu	Ser	Leu	Pro	Leu	
			435				440					445				
aca	att	gga	ctt	tac	gcc	aaa	tgg	gga	tcc	gga	aaa	tca	gca	ctt	ctc	1392
Thr	Ile	Gly	Leu	Tyr	Ala	Lys	Trp									

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Gly Val Ser Leu Ser Val Ser Phe Ala Leu Phe Phe Ala Ile Phe Leu	
485 490 495	
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Phe Phe Gly Met Phe Ser Leu Thr Phe Thr Met Leu Ile Ala Ile Ser	
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Asn Ser Val Thr Ala Tyr Leu Ile Ser Trp Ser Val Phe Leu Leu Ile	
515 520 525	
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Phe Ile Ile Phe Cys Ser Leu Ile Val Val Val Tyr Tyr Gly Asp Arg	
530 535 540	
aag aac tgg tat act tca atg gat ata gcc aat ttt ttt gca cgg gtg	1680
Lys Asn Trp Tyr Thr Ser Met Asp Ile Ala Asn Phe Phe Ala Arg Val	
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Phe Ser Arg Ile Arg Leu Val Tyr Asn Ile Leu Thr Leu His Ala Pro	
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Met Asn Ser Glu Asp Ser Ala Ser Met Pro Val Ser Phe Leu Phe Ala	
580 585 590	
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Asp Tyr His Arg Leu Ser Ser Ile Gly Gly Glu Gln Ala Leu Ala Lys	
595 600 605	
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Ile Val Ala Thr Leu Phe Glu Ala Ala Glu Thr His Phe Gly Val Leu	
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Pro Val Arg Leu Phe Cys Cys Met Lys Pro Pro Tyr Pro Gly Ile His	
625 630 635 640	
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Gly Ser Leu Arg Arg His Cys Gly Val Pro His Val Ile Leu Leu Ile	
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Ile Ile Met Tyr Ser Trp Thr Asn Val Pro Arg Arg Arg Val Asn Ala	
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Ala Ala Arg Asn Ala His Lys Leu Arg Phe Glu Gly Leu Met Gln Lys	
725 730 735	
tta cag acc gag gtt gat ctt ctt gct gat atg atc cga tca ctc gat	2256
Leu Gln Thr Glu Val Asp Leu Leu Ala Asp Met Ile Arg Ser Leu Asp	
740 745 750	
gct ttc act aga agt cac aca cgt ctc gtt gtg gtg gtc gat ggg ctc	2304
Ala Phe Thr Arg Ser His Thr Arg Leu Val Val Val Val Asp Gly Leu	
755 760 765	
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Asp Asn Cys Glu Gln Glu Arg Met Val Gln Thr Leu Asp Ala Leu Glu	
770 775 780	
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Leu Leu Phe Ser Ala Arg Lys His Arg Pro Phe Ile Thr Ile Ile Ala	
785 790 795 800	
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Val Asp Pro His Val Ile Val Ser Ala Ile Asn His Asn Met His Ser	
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Ala Leu Ser Gly Thr Glu Leu Thr Gly His Asp Tyr Leu Lys Asn Ile	
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Phe Lys Arg Gln Asp Thr Phe Tyr Gly Ser His Leu Ser Leu Arg Glu	
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965 970 975	
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Gln Leu Leu Leu Ser Glu Val Tyr Tyr Gln Leu Lys Asp His Ile Pro	
980 985 990	
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Ala Gln Asp Asp Leu Met Gln Leu Asp Arg Asn Leu Glu Asn Phe Glu	
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Gly Phe Leu Asp Ser Lys Gly Ile Pro Ser Ala Glu Arg Leu Thr	
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Ile Arg Lys Ile Asp Ile Pro Ser Asn Arg Leu Asp Ser Ile Leu	
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Cys Pro Leu Pro Glu Leu Lys Asp Ser Met Gln Leu Pro Leu Gly	
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Thr	Leu	Arg	Glu	Glu	Asp	Glu	Glu	Glu	Glu	Ile	Glu	Glu	Ala	Ala	
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Tyr	Arg	Thr	Ser	Ser	Arg	Tyr	Arg	Arg	Met	Ser	Arg	Gly	Asp	Leu	
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Phe	Gln	Asn	Gln	Gln	Thr	Val	Gln	Arg	Arg	Gly	Gly	Asp	Asp	Phe	
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 35 40 45

Ala Leu Thr Ala Glu Ile Ser Ala Leu Arg Asn Ala Asn Gly Glu Ser
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Leu Leu Thr Val Ala Val Arg Ser Gly Asn Thr Ala Val Ala Lys Gln
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Leu Ala Gln Leu Asp Pro Asp Ala Ile Asp Glu Thr Asp Asn Glu Gly
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Trp Ser Ala Leu Leu Asn Ala Ala His Cys Gly His Val Asp Ile Val
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Arg Leu Leu Ile Asp Asn Gly Ala Ser Val Asp Gln Pro Asp Leu Met
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Gly Trp Ser Pro Leu Met Trp Ala Val Tyr Lys Asn His Leu Asp Val
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Val Asp Leu Leu Val Asn Ala Lys Val Asn Ala Cys Asp Lys Phe Gly
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Ser Thr Ala Leu Ile Trp Ala Ala Arg Lys Gly His Leu Pro Val Val
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Ser Ser Thr Ala Leu Met Leu Ala Thr Arg Gly Asn Phe Ile Gln Val
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Val Glu Leu Leu Leu Thr Arg Glu Pro Asn Val Asn Val Ala Asp Gln
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Lys Asn Lys Asp Gly Glu Thr Pro Leu Leu Arg Ala Ala Lys Cys Arg
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His Val His Leu Cys Thr Tyr Leu Met Ser Phe Gly Ala Lys Leu Ala
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Arg Ser Arg Arg Leu Thr Gln Ala Leu Leu Ser Asn Pro Ser Asp Ser
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Asp Leu Ser Asn Pro Gln Pro Ile Leu Pro Leu Ile Phe Gly Pro Ile

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Ala Lys Leu Lys Glu Ala Met His Ser Phe Ser Arg Asp Trp Leu Asp 465 470 475 480		
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Phe Phe Gly Met Phe Ser Leu Thr Phe Thr Met Leu Ile Ala Ile Ser 500 505 510		
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Asp Tyr His Arg Leu Ser Ser Ile Gly Gly Glu Gln Ala Leu Ala Lys 595 600 605		
Ile Val Ala Thr Leu Phe Glu Ala Ala Glu Thr His Phe Gly Val Leu 610 615 620		
Pro Val Arg Leu Phe Cys Cys Met Lys Pro Pro Tyr Pro Gly Ile His 625 630 635 640		

Gly Ser Leu Arg Arg His Cys Gly Val Pro His Val Ile Leu Leu Ile
645 650 655

Val Ala Val Phe Leu Leu Ile Met Ala Gln Val Phe Gly Thr Val Trp
660 665 670

Leu Leu Ser Asp Arg Asp Pro Asn Asn Phe Asn Leu Phe Ile Ala Ile
675 680 685

Ala Phe Leu Cys Gly Phe Val Met Ile Ala Ile Tyr Pro Leu Ala Leu
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Ile Ile Met Tyr Ser Trp Thr Asn Val Pro Arg Arg Arg Val Asn Ala
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Ala Ala Arg Asn Ala His Lys Leu Arg Phe Glu Gly Leu Met Gln Lys
725 730 735

Leu Gln Thr Glu Val Asp Leu Leu Ala Asp Met Ile Arg Ser Leu Asp
740 745 750

Ala Phe Thr Arg Ser His Thr Arg Leu Val Val Val Val Asp Gly Leu
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Asp Asn Cys Glu Gln Glu Arg Met Val Gln Thr Leu Asp Ala Leu Glu
770 775 780

Leu Leu Phe Ser Ala Arg Lys His Arg Pro Phe Ile Thr Ile Ile Ala
785 790 795 800

Val Asp Pro His Val Ile Val Ser Ala Ile Asn His Asn Met His Ser
805 810 815

Ala Leu Ser Gly Thr Glu Leu Thr Gly His Asp Tyr Leu Lys Asn Ile
820 825 830

Ile Ser Met Pro Phe Tyr Leu His Asn Ser Ala Leu Arg Gln Leu Gln
835 840 845

Ser Lys Leu Arg Glu Lys Arg Glu Ser Met Ala Glu Trp Lys Glu Arg
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Phe Lys Arg Gln Asp Thr Phe Tyr Gly Ser His Leu Ser Leu Arg Glu

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Asp Arg	Phe Tyr Gln Leu	Asn	Leu Cys Gly Leu	Val	Leu Ala Thr
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Cys Pro	Leu Pro Glu Leu	Lys	Asp Ser Met Gln	Leu	Pro Leu Gly
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Asp Trp	Thr Leu Ile Arg	Leu	Leu Leu Glu Thr	Leu	Lys Val Phe
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Thr Leu	Arg Glu Glu Asp	Glu	Glu Glu Glu Ile	Glu	Glu Ala Ala
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His Phe	Ser His Phe Ser	Ser	Ser Thr Asp Gly	Pro	Ser Pro Met
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Arg Phe	Asp Asp Asn Ile	Asn	Asp Leu Glu Arg	Glu	Ala Ser Asp
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Tyr Arg Thr Ser Ser Arg Tyr Arg Arg Met Ser Arg Gly Asp Leu				
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Met Arg Gly Met His Gln Asn Asp Thr Ile Arg Ser Lys Ile Asn				
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Phe Gln Asn Gln Gln Thr Val Gln Arg Arg Gly Gly Asp Asp Phe				
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Asn Arg Phe Gly Asp Ser Met Gly Ser Leu Gly His Arg Ala Leu Leu	
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Gln Tyr Ile Asp Asn Asn Asp Ile Ser Gly Leu Arg Ala Ile Leu Asp	
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Ser Arg His Leu Thr Ile Asp Asp Arg Asp Glu Asn Ala Thr Thr Val	
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Leu Met Val Val Ala Gly Arg Gly Leu Thr Ala Phe Val Arg Glu Phe	
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Leu Ala Arg Gly Ala Asp Val Gln Ala Glu Asp Leu Asp Asn Trp Thr	
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Ala Leu Leu Cys Ala Ser Arg Asn Gly His Leu Asp Val Val Gln Leu	
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Leu Leu Asp His Gly Ala Glu Val Glu His Arg Asp Met Gly Gly Trp	
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Thr Ser Leu Met Trp Ala Ala Tyr Arg Gly His Thr Glu Leu Val Arg	
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Leu Leu Leu Asp Lys Gly Ala Asp Gly Asn Ala His Gly Asn Tyr His	
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Leu Gly Ala Leu Leu Trp Ala Ala Gly Arg Gly Tyr Lys Asp Ile Val	
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Glu Leu Leu Val Gln Arg Gly Ala Lys Val Asn Val Gly Asp Lys Tyr	
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Gly Thr Thr Ala Leu Val Trp Ala Cys Arg Arg Gly Asn Val Glu Ile	
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Val Asp Thr Leu Leu Lys Ala Gly Ala Asn Val Asp Thr Ala Gly Met	
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Cys Val Ser Ser Ile Leu Glu Lys Lys Pro Asn Val Asn Ala Leu Asp	
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Lys Asp Gly Met Thr Ala Leu Cys Ile Ala Ser Arg Glu Gly Phe Gln	
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Asp Ile Ala Ala Ser Leu Ile Ala Ala Gly Ala Tyr Ile Asn Ile Gln	
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Ser	Ala	Thr	Lys	Asp	Gly	Asp	Thr	Pro	Leu	Leu	Arg	Ala	Val	Arg	Asn		
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cgc	aac	ttg	gag	att	gtg	cac	tta	ttg	cta	gat	cga	aag	gcc	aag	gtg		1152
Arg	Asn	Leu	Glu	Ile	Val	His	Leu	Leu	Leu	Asp	Arg	Lys	Ala	Lys	Val		
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acc	gct	agc	gac	aaa	agg	ggc	gac	acc	tgc	ctg	cac	atc	gca	atg	cgg		1200
Thr	Ala	Ser	Asp	Lys	Arg	Gly	Asp	Thr	Cys	Leu	His	Ile	Ala	Met	Arg		
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Ala	Arg	Ser	Lys	Thr	Ile	Val	Glu	Ala	Leu	Leu	Arg	Asn	Pro	Lys	His		
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agt	cag	ctt	cta	tat	aga	gcc	aac	aaa	gct	gga	gaa	acg	ccc	tac	aac		1296
Ser	Gln	Leu	Leu	Tyr	Arg	Ala	Asn	Lys	Ala	Gly	Glu	Thr	Pro	Tyr	Asn		
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Ile	Asp	Ser	Leu	His	Gln	Lys	Thr	Ile	Leu	Gly	Gln	Val	Phe	Gly	Ala		
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aga	cgt	ctg	aac	acc	aac	gag	gac	tcc	gag	gga	atg	ctg	ggc	tac	gaa		1392
Arg	Arg	Leu	Asn	Thr	Asn	Glu	Asp	Ser	Glu	Gly	Met	Leu	Gly	Tyr	Glu		
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Leu	Tyr	Ser	Ser	Ala	Leu	Ala	Asp	Val	Leu	Ser	Glu	Pro	Thr	Leu	Thr		
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Thr	Pro	Ile	Thr	Val	Gly	Leu	Tyr	Ala	Lys	Trp	Gly	Ser	Gly	Lys	Ser		
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Phe	Leu	Leu	Asn	Lys	Leu	Arg	Asp	Glu	Met	Asn	Asn	Phe	Ala	Arg	Gln		
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Trp	Ala	Glu	Pro	Pro	Ile	Arg	Thr	Ser	Gly	Leu	Leu	Phe	Ile	Val	Cys		
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ctt	cat	gtg	gca	ttg	ctc	att	gga	act	att	gtg	gga	ctg	agc	act	tgg		1632
Leu	His	Val	Ala	Leu	Leu	Ile	Gly	Thr	Ile	Val	Gly	Leu	Ser	Thr	Trp		
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tca	gcg	gtt	gtg	ggc	gtg	tcg	gcg	gcc	gtc	ggc	ttc	ttg	ctg	ctc	gcc		1680
Ser	Ala	Val	Val	Gly	Val	Ser	Ala	Ala	Val	Gly	Phe	Leu	Leu	Leu	Ala		
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Tyr Leu Leu Leu Ala Ala Val Arg Tyr Cys Asn Tyr Gln Met Asp Met	
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Leu Leu Asp Ala Ile Glu Ser His Tyr Gly Trp Leu Ala Thr Arg Leu	
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Phe Ala Asp Glu Lys Glu Lys Glu His Ile Leu Val Ala Leu Tyr Val	
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Ile Ala Ala Val Met Gly Thr Leu Ile Cys Thr His Leu His Val Leu	
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Ala Lys Val Phe Val Ser Leu Phe Thr Ser His Ile Arg Val Leu Lys	
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Arg Ala Val Arg Ser Ser Glu Ser Ala Pro Leu Thr Met Leu Gly Ala	
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Glu Val Ala Val Met Thr Asp Met Val Lys Cys Leu Asp Ala Phe Thr	
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Tyr	Leu	Arg	Glu	Ala	Ala	Pro	Leu	Leu	Glu	Leu	Asp	Arg	Asp	Glu	
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Arg	Lys	Leu	Asp	Ala	Phe	Leu	Gln	Leu	His	Lys	Ser	Asp	Leu	Leu	
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Pro	Tyr	Leu	Arg	Lys	Val	Leu	Lys	Glu	Asp	Gln	Gln	Thr	Ile	Glu	
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Cys	Glu	Arg	Leu	Pro	Arg	Lys	Gln	Gln	Arg	Gln	Gln	Gln	Gln	Pro	
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Thr	Asp	Ala	Leu	Met	Gln	Pro	Pro	Arg	Glu	Ser	Leu	Ser	Arg	Lys	
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aac	tcc	gtc	agt	cat	atg	gaa	aag	cag	gtc	acg	ctg	gag	gag	cag	3969
Asn	Ser	Val	Ser	His	Met	Glu	Lys	Gln	Val	Thr	Leu	Glu	Glu	Gln	
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atg	atc	tgc	ggc	acc	ttg	cag	act	ctg	aat	gag	gag	gcg	tac	gag	4014
Met	Ile	Cys	Gly	Thr	Leu	Gln	Thr	Leu	Asn	Glu	Glu	Ala	Tyr	Glu	
	1325					1330					1335				
gat	gtg	gcc	agt	agc	gag	cga	ccg	agt	ccc	aca	ggg	gag	atg	ttg	4059
Asp	Val	Ala	Ser	Ser	Glu	Arg	Pro	Ser	Pro	Thr	Gly	Glu	Met	Leu	
	1340					1345					1350				
gca	gca	gtc	gca	caa	ctg	caa	tta	gca	ccc	atc	cgc	gag	tct	tcc	4104
Ala	Ala	Val	Ala	Gln	Leu	Gln	Leu	Ala	Pro	Ile	Arg	Glu	Ser	Ser	
	1355					1360					1365				
gag	ttc	gga	tcg	cct	tcc	gac	gat	cag	aag	cag	tat	ggg	gtc	aag	4149
Glu	Phe	Gly	Ser	Pro	Ser	Asp	Asp	Gln	Lys	Gln	Tyr	Gly	Val	Lys	
	1370					1375					1380				
ata	agc	aac	aac	aac	aac	aac	aac	cag	tac	ttg	cat	gcg	gag	tac	4194
Ile	Ser	Asn	Asn	Asn	Asn	Asn	Asn	Gln	Tyr	Leu	His	Ala	Glu	Tyr	
	1385					1390					1395				
aac	cgg	agc	gtc	agc	tcg	cat	tcc	ctg	cag	agt	ctg	agc	act	ctg	4239
Asn	Arg	Ser	Val	Ser	Ser	His	Ser	Leu	Gln	Ser	Leu	Ser	Thr	Leu	
	1400					1405					1410				
gtg	ggt	gca	ccc	gtt	ggt	cat	ggt	ggt	tca	ggt	ggc	agt	cac	cta	4284
Val	Gly	Ala	Pro	Val	Gly	His	Gly	Gly	Ser	Gly	Gly	Ser	His	Leu	
	1415					1420					1425				
cac	ctg	ggc	aat	ggt	aac	gat	ctg	agc	gat	agc	acg	ctc	gat	cta	4329
His	Leu	Gly	Asn	Gly	Asn	Asp	Leu	Ser	Asp	Ser	Thr	Leu	Asp	Leu	
	1430					1435					1440				
atg	cat	gta	gac	tcg	gta	ttt	ggt	ggt	ggt	ggt	gga	ggt	ggt	tat	4374
Met	His	Val	Asp	Ser	Val	Phe	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Tyr	
	1445					1450					1455				

cat cgg gca tcg cgc cag atc tcg ata agc agc gag ctg ctg cac 4419
 His Arg Ala Ser Arg Gln Ile Ser Ile Ser Ser Glu Leu Leu His
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gag tcc agt tcc ttg ccc atg gtg gtg gtc att ccc aat gcc tcg 4464
 Glu Ser Ser Ser Leu Pro Met Val Val Val Ile Pro Asn Ala Ser
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ggc gaa cag gcc tac gac gac acc aag ctc tga 4497
 Gly Glu Gln Ala Tyr Asp Asp Thr Lys Leu
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 <211> 1498
 <212> PRT
 <213> Drosophila

<400> 8

Met Phe Lys Ser Arg Leu Lys Thr Asn Pro Gly Gly Ser Glu Asn Ile
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Asn Arg Phe Gly Asp Ser Met Gly Ser Leu Gly His Arg Ala Leu Leu
 20 25 30

Gln Tyr Ile Asp Asn Asn Asp Ile Ser Gly Leu Arg Ala Ile Leu Asp
 35 40 45

Ser Arg His Leu Thr Ile Asp Asp Arg Asp Glu Asn Ala Thr Thr Val
 50 55 60

Leu Met Val Val Ala Gly Arg Gly Leu Thr Ala Phe Val Arg Glu Phe
 65 70 75 80

Leu Ala Arg Gly Ala Asp Val Gln Ala Glu Asp Leu Asp Asn Trp Thr
 85 90 95

Ala Leu Leu Cys Ala Ser Arg Asn Gly His Leu Asp Val Val Gln Leu
 100 105 110

Leu Leu Asp His Gly Ala Glu Val Glu His Arg Asp Met Gly Gly Trp
 115 120 125

Thr Ser Leu Met Trp Ala Ala Tyr Arg Gly His Thr Glu Leu Val Arg
 130 135 140

Leu Leu Leu Asp Lys Gly Ala Asp Gly Asn Ala His Gly Asn Tyr His

145 150 155 160
 Leu Gly Ala Leu Leu Trp Ala Ala Gly Arg Gly Tyr Lys Asp Ile Val
 165 170 175
 Glu Leu Leu Val Gln Arg Gly Ala Lys Val Asn Val Gly Asp Lys Tyr
 180 185 190
 Gly Thr Thr Ala Leu Val Trp Ala Cys Arg Arg Gly Asn Val Glu Ile
 195 200 205
 Val Asp Thr Leu Leu Lys Ala Gly Ala Asn Val Asp Thr Ala Gly Met
 210 215 220
 Tyr Ser Trp Thr Pro Leu Leu Val Ala Ala Ala Gly Gly His Thr Asp
 225 230 235 240
 Cys Val Ser Ser Ile Leu Glu Lys Lys Pro Asn Val Asn Ala Leu Asp
 245 250 255
 Lys Asp Gly Met Thr Ala Leu Cys Ile Ala Ser Arg Glu Gly Phe Gln
 260 265 270
 Asp Ile Ala Ala Ser Leu Ile Ala Ala Gly Ala Tyr Ile Asn Ile Gln
 275 280 285
 Asp Arg Gly Ala Asp Thr Pro Leu Ile His Ala Val Lys Ala Gly His
 290 295 300
 Arg Thr Val Val Glu Ala Leu Leu Lys Lys His Ala Asp Val Asp Ile
 305 310 315 320
 Gln Gly Lys Asp Arg Lys Thr Ala Ile Tyr Thr Ala Val Glu Lys Gly
 325 330 335
 His Thr Pro Ile Val Lys Leu Leu Leu Ala Thr Asn Pro Asp Leu Glu
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 Ser Ala Thr Lys Asp Gly Asp Thr Pro Leu Leu Arg Ala Val Arg Asn
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 Arg Asn Leu Glu Ile Val His Leu Leu Leu Asp Arg Lys Ala Lys Val
 370 375 380

Thr Ala Ser Asp Lys Arg Gly Asp Thr Cys Leu His Ile Ala Met Arg
385 390 395 400

Ala Arg Ser Lys Thr Ile Val Glu Ala Leu Leu Arg Asn Pro Lys His
405 410 415

Ser Gln Leu Leu Tyr Arg Ala Asn Lys Ala Gly Glu Thr Pro Tyr Asn
420 425 430

Ile Asp Ser Leu His Gln Lys Thr Ile Leu Gly Gln Val Phe Gly Ala
435 440 445

Arg Arg Leu Asn Thr Asn Glu Asp Ser Glu Gly Met Leu Gly Tyr Glu
450 455 460

Leu Tyr Ser Ser Ala Leu Ala Asp Val Leu Ser Glu Pro Thr Leu Thr
465 470 475 480

Thr Pro Ile Thr Val Gly Leu Tyr Ala Lys Trp Gly Ser Gly Lys Ser
485 490 495

Phe Leu Leu Asn Lys Leu Arg Asp Glu Met Asn Asn Phe Ala Arg Gln
500 505 510

Trp Ala Glu Pro Pro Ile Arg Thr Ser Gly Leu Leu Phe Ile Val Cys
515 520 525

Leu His Val Ala Leu Leu Ile Gly Thr Ile Val Gly Leu Ser Thr Trp
530 535 540

Ser Ala Val Val Gly Val Ser Ala Ala Val Gly Phe Leu Leu Leu Ala
545 550 555 560

Tyr Leu Leu Leu Ala Ala Val Arg Tyr Cys Asn Tyr Gln Met Asp Met
565 570 575

Gln Trp Ala Tyr Ser Val Gln His Gly Leu Glu Lys Arg Met Thr Arg
580 585 590

Leu Arg Leu Ile Leu Gln Val Ala Phe Cys His Pro Pro Gly Pro Gln
595 600 605

Ser Asp Ser Gln Ala Lys Pro Val Arg Phe His Phe Ala Glu Ala Asn

610	615	620
Ser Ala Ser Pro Thr Gly Asp Gly Ala Val Ala His Met Leu Ala Ala		
625	630	635 640
Leu Leu Asp Ala Ile Glu Ser His Tyr Gly Trp Leu Ala Thr Arg Leu		
	645	650 655
Tyr Arg Ala Phe Arg Pro Lys Cys Leu Lys Val Asp Val Gly Trp Arg		
	660	665 670
Trp Arg Arg Met Cys Cys Ile Pro Ile Val Leu Ile Phe Glu Leu Ala		
	675	680 685
Leu Val Thr Val Val Thr Gly Ile Ser Leu Thr Val Ala Tyr Phe Thr		
	690	695 700
Phe Ala Asp Glu Lys Glu Lys Glu His Ile Leu Val Ala Leu Tyr Val		
705	710	715 720
Ile Ala Ala Val Met Gly Thr Leu Ile Cys Thr His Leu His Val Leu		
	725	730 735
Ala Lys Val Phe Val Ser Leu Phe Thr Ser His Ile Arg Val Leu Lys		
	740	745 750
Arg Ala Val Arg Ser Ser Glu Ser Ala Pro Leu Thr Met Leu Gly Ala		
	755	760 765
Glu Val Ala Val Met Thr Asp Met Val Lys Cys Leu Asp Ala Phe Thr		
	770	775 780
Asn Gln Gln Ser Arg Leu Val Gly Val Ile Asp Ala Leu Asp Ser Cys		
785	790	795 800
Asp Thr Glu Arg Ile Leu Thr Leu Leu Asn Ala Val Gln Thr Leu Leu		
	805	810 815
Ser Ser Pro Asn Arg Pro Phe Val Leu Leu Ile Ser Val Asp Pro His		
	820	825 830
Val Ile Ala Lys Ala Ala Glu Ala Asn Ser Arg Arg Leu Phe Thr Glu		
	835	840 845

Gly Gly Ile Gly Gly His Asp Phe Leu Arg Asn Leu Val His Leu Pro
850 855 860

Val Tyr Leu Gln Asn Ser Gly Leu Arg Lys Val Gln Arg Ala Gln Met
865 870 875 880

Thr Ala Leu Leu Phe Lys Arg Ser Gly Gly Gly Asp Tyr Gln Thr Asp
885 890 895

Asp Gly Pro Thr Leu Gly His Ser Val Ser Ala Arg Arg Leu Ser Asn
900 905 910

Ala Ser Glu Ile Ile Ser Ser Gln Glu Lys Leu Arg Gly Pro Ala Arg
915 920 925

Gly Gly Gly Gly Lys Lys Leu Arg Leu Ser Glu Ser Val Ala Ser Ser
930 935 940

Thr Gly Ser Asn Leu His Arg Leu Gly Gln Asn Pro Gln Thr Val Leu
945 950 955 960

Asp Leu Ser Arg Ile Val Leu Thr Asp Asp Tyr Phe Ser Asp Val Asn
965 970 975

Pro Arg Ser Met Arg Arg Leu Met Asn Val Ile Tyr Ile Thr Val Arg
980 985 990

Leu Leu Lys Ala Phe Gln Ile Glu Phe Ser Trp Tyr Arg Leu Ser Ser
995 1000 1005

Trp Ile Asn Leu Thr Glu Gln Trp Pro Leu Arg Ala Ser Met Ile
1010 1015 1020

Val Leu His His Asp Gln Phe Met Asp Ser Asn Ala Asp Glu Ser
1025 1030 1035

Val Ser Leu Gln Ser Val Tyr Glu Lys Leu Arg Pro Lys Leu Ala
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Tyr Leu Arg Glu Ala Ala Pro Leu Leu Glu Leu Asp Arg Asp Glu
1055 1060 1065

Arg Lys Leu Asp Ala Phe Leu Gln Leu His Lys Ser Asp Leu Leu

1070		1075		1080
Val Ala Asp Leu Arg Ile Phe Leu Pro Phe Thr Ile Asn Leu Asp				
1085		1090		1095
Pro Tyr Leu Arg Lys Val Leu Lys Glu Asp Gln Gln Thr Ile Glu				
1100		1105		1110
Asp Glu Gly Ser Leu Val Ile Gln Ala Arg Pro Ser Val Ser Asn				
1115		1120		1125
Thr Met Arg Gln Phe Pro Ala Pro Thr Thr Tyr Val Pro Ser Pro				
1130		1135		1140
Gln Ala Tyr Pro Pro Tyr Gln Met Phe Gln Asn Glu Tyr Pro Ala				
1145		1150		1155
Asn Glu Leu Arg Ser Arg Asn Leu Ser Thr Ser Thr Glu Pro Val				
1160		1165		1170
Thr Pro Leu Ile Asn Ser Pro Ser Asp Ser Phe Gly Asp Asp Ile				
1175		1180		1185
Leu Gln Thr Lys Leu Thr Asp Leu Thr Val Glu Gly Val Ile Ser				
1190		1195		1200
Leu Leu Asp Arg Ile Glu Asp Met Lys Pro Ala Leu Pro Lys Leu				
1205		1210		1215
Ala Pro Val Leu Arg Glu Asn Ala Ile Asn Gly Arg Val Leu Lys				
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His Cys Asp Met Pro Asp Leu Lys Ser Val Leu Gly Leu Ser Phe				
1235		1240		1245
Gly His Trp Glu Leu Phe Arg Leu Leu Ile Thr Thr Leu Arg Glu				
1250		1255		1260
Cys Glu Arg Leu Pro Arg Lys Gln Gln Arg Gln Gln Gln Gln Pro				
1265		1270		1275
Gly Ala Leu Glu Ala Pro Ser Asn Val Pro Met Ile Lys Asp Val				
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Thr	Asp	Ala	Leu	Met	Gln	Pro	Pro	Arg	Glu	Ser	Leu	Ser	Arg	Lys
1295						1300					1305			
Asn	Ser	Val	Ser	His	Met	Glu	Lys	Gln	Val	Thr	Leu	Glu	Glu	Gln
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1325						1330					1335			
Asp	Val	Ala	Ser	Ser	Glu	Arg	Pro	Ser	Pro	Thr	Gly	Glu	Met	Leu
1340						1345					1350			
Ala	Ala	Val	Ala	Gln	Leu	Gln	Leu	Ala	Pro	Ile	Arg	Glu	Ser	Ser
1355						1360					1365			
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1370						1375					1380			
Ile	Ser	Asn	Asn	Asn	Asn	Asn	Asn	Gln	Tyr	Leu	His	Ala	Glu	Tyr
1385						1390					1395			
Asn	Arg	Ser	Val	Ser	Ser	His	Ser	Leu	Gln	Ser	Leu	Ser	Thr	Leu
1400						1405					1410			
Val	Gly	Ala	Pro	Val	Gly	His	Gly	Gly	Ser	Gly	Gly	Ser	His	Leu
1415						1420					1425			
His	Leu	Gly	Asn	Gly	Asn	Asp	Leu	Ser	Asp	Ser	Thr	Leu	Asp	Leu
1430						1435					1440			
Met	His	Val	Asp	Ser	Val	Phe	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Tyr
1445						1450					1455			
His	Arg	Ala	Ser	Arg	Gln	Ile	Ser	Ile	Ser	Ser	Glu	Leu	Leu	His
1460						1465					1470			
Glu	Ser	Ser	Ser	Leu	Pro	Met	Val	Val	Val	Ile	Pro	Asn	Ala	Ser
1475						1480					1485			
Gly	Glu	Gln	Ala	Tyr	Asp	Asp	Thr	Lys	Leu					
1490						1495								